



Complete Summary

TITLE

Cardiac rehabilitation: percentage of cardiac rehabilitation programs in the healthcare system that meet the specified performance measure criteria for assessment of risk for adverse cardiovascular events.

SOURCE(S)

Thomas RJ, King M, Lui K, Oldridge N, Pina IL, Spertus J, ACC/AHA Task Force Members. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Cardiopulm Rehabil Prev 2007 Sep-Oct;27(5):260-90. [74 references] [PubMed](#)

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Measure Domain

PRIMARY MEASURE DOMAIN

Structure

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

DESCRIPTION

This measure is used to assess the percentage of cardiac rehabilitation programs in the healthcare system that meet the specified performance measure criteria for assessment of risk for adverse cardiovascular events.

RATIONALE

A standardized assessment should be performed to identify patients with unstable symptoms and other factors that place the patient at increased risk for adverse cardiovascular events. When high-risk findings are noted, a patient should be considered for prompt evaluation and treatment, and rehabilitation recommendations should be adjusted accordingly.

Recurrent adverse cardiovascular events are relatively common in persons with cardiovascular disease (CVD). In one study from Olmsted County, Minnesota, nearly half of patients discharged from the hospital following a myocardial infarction (MI) had a recurrent adverse cardiovascular event in the 3 years following their MI. However, adverse events are rare during cardiac rehabilitation (CR) early after a CVD event, occurring approximately once in every 100,000 patient-hours. This safety record is likely due in part to standard procedures that exist in CR programs to frequently screen patients for signs and symptoms that increase their risk for adverse cardiovascular events. If a CR participant develops abnormal cardiovascular signs (significant arrhythmias or blood pressure abnormalities, for example) or symptoms (exertional chest pain, for instance), they typically receive prompt evaluation and care.

Published reports suggest limited accuracy of the risk stratification methods from the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR), American College of Cardiology/American Heart Association (ACC/AHA), and the American College of Physicians in identifying patients at risk for adverse events during CR sessions. However, one study found that a combination of the AACVPR criteria with a comorbidity index helped improve the accuracy of risk stratification, particularly among female patients. A significant limitation to these studies is the fact that patients identified at high risk undergo additional evaluation and treatment to lower their risk, thereby dampening the ability of such screening measures to accurately identify individuals at increased risk of adverse cardiovascular events.

PRIMARY CLINICAL COMPONENT

Cardiac rehabilitation program; assessment of risk for adverse cardiovascular events

DENOMINATOR DESCRIPTION

Number of cardiac rehabilitation (CR) programs in the healthcare system

NUMERATOR DESCRIPTION

Number of cardiac rehabilitation (CR) programs in the healthcare system that meet the performance measure for assessment of risk for adverse cardiovascular events (see the related "Numerator Inclusions/Exclusions" field in the Complete Summary)

Evidence Supporting the Measure

EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- A systematic review of the clinical literature
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Use of this measure to improve performance
Use of this measure to increase capacity

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Balady GJ, Williams MA, Ades PA, Bittner V, Comoss P, Foody JA, Franklin B, Sanderson B, Southard D, American Heart Association Exercise, Cardiac Rehabilitation, and Prevention, Council on Clinical Cardiology, Councils on Cardiovascular Nursing, Epidemiology and Prevention, and Nutrition,, American Association of Cardiovascular and Pulmonary Rehabilitation. Core components of cardiac rehabilitation/secondary prevention programs: 2007 update: a scientific statement from the American Heart Association Exercise, Cardiac Rehabilitation, a. J Cardiopulm Rehabil Prev 2007 May-Jun;27(3):121-9. [PubMed](#)

State of Use of the Measure

STATE OF USE

Pilot testing

CURRENT USE

Internal quality improvement

Application of Measure in its Current Use

CARE SETTING

Ambulatory Care
Home Care

Hospitals
Physician Group Practices/Clinics
Rehabilitation Centers

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Advanced Practice Nurses
Allied Health Personnel
Dietitians
Nurses
Physician Assistants
Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Does not apply to this measure

TARGET POPULATION GENDER

Does not apply to this measure

STRATIFICATION BY VULNERABLE POPULATIONS

Does not apply to this measure

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

See the "Rationale" field.

ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

BURDEN OF ILLNESS

Unspecified

UTILIZATION

Unspecified

COSTS

Unspecified

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Not within an IOM Care Need

IOM DOMAIN

Not within an IOM Domain

Data Collection for the Measure

CASE FINDING

Does not apply to this measure

DENOMINATOR SAMPLING FRAME

Does not apply to this measure

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions

Number of cardiac rehabilitation (CR) programs in the healthcare system

Exclusions

Unspecified

RELATIONSHIP OF DENOMINATOR TO NUMERATOR

Does not apply to this measure

DENOMINATOR (INDEX) EVENT

Does not apply to this measure

DENOMINATOR TIME WINDOW

Does not apply to this measure

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions

Number of cardiac rehabilitation (CR) programs in the healthcare system that meet the performance measure* for assessment of risk for adverse cardiovascular events

*The CR program has the following processes in place:

1. Documentation, at program entry, that each patient undergoes an assessment of clinical status (e.g., symptoms, medical history) in order to identify high-risk conditions for adverse cardiovascular events.
2. A policy to provide recurrent assessments for each patient during the time of participation in the CR program in order to identify any changes in clinical status that increase the patient's risk of adverse cardiovascular events. If such findings are noted, the CR staff contacts the program's physician director and/or the patient's primary healthcare provider according to thresholds for communication included in the policies developed for the related measure: [Cardiac rehabilitation: percentage of patients in the healthcare system's cardiac rehabilitation program\(s\) who meet the specified performance measure criteria for communication with health care providers](#).

Exclusions

Unspecified

MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

NUMERATOR TIME WINDOW

Encounter or point in time

DATA SOURCE

Special or unique data

LEVEL OF DETERMINATION OF QUALITY

Does not apply to this measure

PRE-EXISTING INSTRUMENT USED

Unspecified

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a higher score

ALLOWANCE FOR PATIENT FACTORS

Does not apply to this measure

STANDARD OF COMPARISON

Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

The Cardiac Rehabilitation/Secondary Prevention Performance Measure Writing Committee initially identified 39 factors from various practice guidelines and other reports that were considered potential performance measures for the Cardiac Rehabilitation/Secondary Prevention Performance Measurement Sets (see Table 1 of the original measure documentation for standard guidelines that were used to rate the classification of recommendations and level of evidence for assessing these factors). The group evaluated these factors according to guidelines established by the American College of Cardiology/American Heart Association (ACC/AHA) Task Force on Performance Measures. Those measures that were deemed to be most evidence-based, interpretable, actionable, clinically meaningful, valid, reliable, and feasible were included in the final performance measurement sets. Once these measures were identified, the writing committee then discussed and refined, over a series of months, the definition, content, and other details of each of the selected measures.

EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Thomas RJ, King M, Lui K, Oldridge N, Pina IL, Spertus J, ACC/AHA Task Force Members. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Cardiopulm Rehabil Prev 2007 Sep-Oct;27(5):260-90. [74 references] [PubMed](#)

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Identifying Information

ORIGINAL TITLE

Performance measure B-2: assessment of risk for adverse cardiovascular events.

MEASURE COLLECTION

Cardiac Rehabilitation/Secondary Prevention Performance Measurement Sets

MEASURE SET NAME

Cardiac Rehabilitation/Secondary Prevention Performance Measurement Set B

DEVELOPER

American Association of Cardiovascular and Pulmonary Rehabilitation/American College of Cardiology/American Heart Association

FUNDING SOURCE(S)

The Writing Committee had one face-to-face meeting at the outset of the writing project. Funding travel to the meeting was covered by the respective organizations (American Association of Cardiovascular and Pulmonary Rehabilitation [AACVPR], American College of Cardiology [ACC], and American Heart Association [AHA]). Conference calls were paid for by AACVPR. Other than in these cases, there were no other funding sources or reimbursements provided.

COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE

American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) Representatives: Randal J. Thomas, MD, MS (Physician, Preventive Cardiologist, Mayo Clinic, Rochester, MN); Marjorie King, MD (Physician, Cardiologist, Helen Hayes Hospital, West Haverstraw, NY); Karen Lui, RN, C, MS (Nurse, GRQ Consulting Firm, Washington, D.C.); Neil Oldridge, PhD (Exercise Science/Physiology, University of Wisconsin-Milwaukee, Milwaukee, WI).

American College of Cardiology (ACC) Representatives: Ileana Piña, MD (Physician, Cardiologist, Case Western Reserve University, Cleveland, OH).

American Heart Association (AHA) Representatives: John Spertus, MD, MPH (Physician, Cardiologist, Mid America Heart Institute/University of Missouri-Kansas City, MO).

FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST

Author Relationships with Industry -- American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR)/American College of Cardiology (ACC)/American Heart Association (AHA) Cardiac Rehabilitation/Secondary Prevention Performance Measures

Writing Committee Member	Research Grant	Speakers' Bureau/Honoraria/Expert Witness	Stock Ownership	Consultant/Advisory Board/Steering Committee
Randal J. Thomas, MD, MS,	Omron, Inc.	None	None	None

Writing Committee Member	Research Grant	Speakers' Bureau/Honoraria/Expert Witness	Stock Ownership	Consultant/Advisory Board/Steering Committee
FAHA				
Marjorie King, MD, FAACVPR, FACC	None	None	None	Healthways
Karen Lui, RN, MS, FAACVPR	None	None	None	None
Neil Oldridge, PhD, FAACVPR	None	None	None	None
Ileana L. Piña, MD, FACC	Novartis	AstraZeneca	None	Food and Drug Administration (FDA)
	National Institutes of Health (NIH)	Novartis		
John Spertus, MD, MPH, FACC	Amgen	None	Health Outcomes Services	Amgen
	Atherotech		Outcomes Instruments	United Healthcare
	Roche Diagnostics			

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2007 Sep

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

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MEASURE AVAILABILITY

The individual measure, "Performance Measure B-2: Assessment of Risk for Adverse Cardiovascular Events," is published in "AACVPR/ACC/AHA 2007 Performance Measures on Cardiac Rehabilitation for Referral to and Delivery of Cardiac Rehabilitation/Secondary Prevention Services." This article is available from the [American Association of Cardiovascular and Pulmonary Rehabilitation](#), the [American College of Cardiology](#), and the [American Heart Association](#) Web sites.

NQMC STATUS

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Date Modified: 11/10/2008

